Cisco PIX **515E** Security Appliance

The Cisco PIX® 515E Security Appliance delivers enterprise-class security for small-to-medium business and enterprise networks, in a modular, purpose-built appliance. Its versatile one-rack unit (1RU) design supports up to six 10/100 Fast Ethernet interfaces, making it an excellent choice for businesses requiring a cost-effective, resilient security solution with DMZ support. Part of the world-leading Cisco PIX Security Appliance Series, the Cisco PIX 515E Security Appliance provides a wide range of rich integrated security services, hardware VPN acceleration capabilities, and powerful remote management capabilities in an easy-to-deploy, high-performance solution.

Enterprise-Class Security for Small-to-Medium Business and Enterprise Networks

The Cisco PIX 515E Security Appliance delivers a multilayered defense for small-to-medium business and enterprise networks through rich, integrated security services including stateful inspection firewalling, protocol and application inspection, virtual private networking (VPN) in-line intrusion protection, and rich multimedia and voice security in a single device. The state-of-the-art Cisco Adaptive Security Algorithm (ASA) provides rich stateful inspection firewall services, tracking the state of all authorized network communications and preventing unauthorized network access.

Figure 1
Cisco PIX 515E Security Appliance

Small-to-medium business and enterprise networks benefit from an additional layer of security via intelligent, "application-aware" security services that examine packet streams at Layers 4–7, using inspection engines specialized for many of today's popular applications. Administrators can also easily create custom security policies for firewall traffic by using the flexible access control methods and the more than 100 predefined applications, services, and protocols that Cisco PIX Security Appliances provide.

Market-Leading Voice-over-IP Security Services Protect Next-Generation Converged Networks

Cisco PIX Security Appliances provide market-leading protection for a wide range of voice-over-IP (VoIP) and multimedia standards, allowing businesses to securely take advantage of the many benefits that converged data, voice, and video networks deliver. By combining VPN with the rich stateful inspection firewall services that Cisco

PIX Security Appliances provide for these converged networking standards, businesses can securely extend voice and multimedia services to home office and remote office environments for additional cost savings, improved productivity, and competitive advantage.

Flexible VPN Services Extend Networks Economically to Remote Networks and Mobile Users

Businesses can securely extend their networks across low-cost Internet connections to mobile users, business partners, and remote offices worldwide using the full-featured VPN capabilities provided by the Cisco PIX 515E Security Appliance. Solutions range from standards-based site-to-site VPN leveraging the Internet Key Exchange (IKE) and IP security (IPsec) VPN standards, to the innovative Easy VPN capabilities found in Cisco PIX Security Appliances and other Cisco security solutions—such as Cisco IOS® routers and Cisco VPN 3000 Series Concentrators. Easy VPN delivers a uniquely scalable, cost-effective, and easy-to-manage remote-access VPN architecture that eliminates the operational costs associated with maintaining remote-device configurations typically required by traditional VPN solutions. Cisco PIX Security Appliances encrypt data using 56-bit Data Encryption Standard (DES), 168-bit Triple DES (3DES), or up to 256-bit Advanced Encryption Standard (AES) encryption. Certain Cisco PIX 515E Security Appliance models have integrated hardware VPN acceleration capabilities, delivering highly scalable, high performance VPN services.

Integrated Intrusion Protection Guards Against Popular Internet Threats

The integrated in-line intrusion-protection capabilities of the Cisco PIX 515E Security Appliance can protect small-to-medium business and enterprise networks from many popular forms of attacks, including Denial-of-Service (DoS) attacks and malformed packet attacks. Using a wealth of advanced intrusion-protection features, including DNSGuard, FloodGuard, FragGuard, MailGuard, IPVerify and TCP intercept, in addition to looking for more than 55 different attack "signatures," Cisco PIX Security Appliances keep a vigilant watch for attacks, can optionally block them, and can notify administrators about them in real time.

Award-Winning Resiliency Provides Maximum Business Uptime

Select models of Cisco PIX 515E Security Appliances provide stateful failover capabilities that ensure resilient network protection for enterprise network environments. Employing a cost-effective, active-standby, high-availability architecture, Cisco PIX Security Appliances that are configured as a failover pair continuously synchronize their connection state and device configuration data. Synchronization can take place over a high-speed LAN connection, providing another layer of protection through the ability to geographically separate the failover pair. In the event of a system or network failure, network sessions are automatically transitioned between appliances, with complete transparency to users.

Robust Remote-Management Solutions Lower Total Cost of Ownership

The Cisco PIX 515E Security Appliance is a reliable, easy-to-maintain platform that provides a wide variety of methods for configuring, monitoring, and troubleshooting. Management solutions range from centralized, policy-based management tools to integrated, Web-based management to support for remote monitoring protocols such as Simple Network Management Protocol (SNMP) and syslog.

Administrators can easily manage large numbers of remote Cisco PIX Security Appliances using CiscoWorks VPN/ Security Management Solution (VMS). This suite consists of numerous modules including Management Center for Firewalls, Auto Update Server Software and Security Monitor. This powerful combination provides a highly scalable, next-generation, three-tier management solution that includes the following features:

- Comprehensive configuration and software image management
- Device hierarchy with "Smart Rules"-based configuration inheritance
- Customizable administrative roles and access privileges
- Comprehensive enterprise change management and auditing
- "Touchless" software image management for remote Cisco PIX Security Appliances
- Support for dynamically addressed appliances

Additional integrated event management and inventory solutions are also available as part of the CiscoWorks VMS network management suite.

The integrated Cisco PIX Device Manager provides an intuitive, Web-based management interface for remotely configuring, monitoring, and troubleshooting a Cisco PIX 515E Security Appliance—without requiring any software (other than a standard Web browser) to be installed on an administrator's computer. A setup wizard is provided for easy installation into any network environment.

Alternatively, through methods including Telnet and Secure Shell (SSH), or out of band through a console port, administrators can remotely configure, monitor, and troubleshoot Cisco PIX Security Appliances using a command-line interface (CLI).

Table 1 Key Product Features and Benefits

Key Features	Benefit
Enterprise-Class Security	
True security appliance	• Uses a proprietary, hardened operating system that eliminates security risks associated with general purpose operating systems • Cisco quality and no moving parts provide a highly reliable security platform
Stateful inspection firewall	• Provides perimeter network security to prevent unauthorized network access • Uses state-of-the-art Cisco ASA for robust stateful inspection firewall services • Provides flexible access-control capabilities for over 100 predefined applications, services and protocols, with the ability to define custom applications and services • Includes numerous application-aware inspection engines that secure advanced networking protocols such as H.323 Version 4, Session Initiation Protocol (SIP), Cisco Skinny Client Control Protocol (SCCP), Real-Time Streaming Protocol (RTSP), Internet Locator Service (ILS), and more • Includes content filtering for Java and ActiveX applets
Easy VPN Server	• Provides remote access VPN concentrator services for a wide variety of Cisco software or hardware-based VPN clients • Pushes VPN policy dynamically to Cisco Easy VPN Remote-enabled solutions upon connection, ensuring the latest corporate security policies are enforced • Extends VPN reach into environments using Network Address Translation (NAT) or Port Address Translation (PAT), via support of Internet Engineering Task Force (IETF) UDP-based draft standard for NAT traversal

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Key Features	Benefit
Site-to-site VPN	• Supports IKE and IPsec VPN standards • Ensures data privacy/integrity and strong authentication to remote networks and remote users over the Internet • Supports 56-bit DES, 168-bit 3DES, and up to 256-bit AES data encryption to ensure data privacy
Intrusion protection	• Provides protection from over 55 different types of popular network-based attacks ranging from malformed packet attacks to DoS attacks • Integrates with Cisco Network Intrusion Detection System (IDS) sensors for the ability to dynamically block/shun hostile network nodes via the firewall
AAA support	• Integrates with popular authentication, authorization, and accounting services via TACACS+ and RADIUS support • Provides tight integration with Cisco Secure Access Control Server (ACS)
X.509 certificate and CRL support	• Supports SCEP-based enrollment with leading X.509 solutions from Baltimore, Entrust, Microsoft, and VeriSign
Integration with leading third-party solutions	• Supports the broad range of Cisco AVVID (Architecture for Voice, Video and Integrated Data) partner solutions that provide URL filtering, content filtering, virus protection, scalable remote management, and more
Robust Network Services/Integration	
Virtual LAN (VLAN)-based virtual interfaces	• Provides increased flexibility when defining security policies and eases overall integration into switched network environments by supporting the creation of logical interfaces based on IEEE 802.1q VLAN tags, and the creation of security policies based on these virtual interfaces • Supports multiple virtual interfaces on a single physical interface through VLAN trunking • Supports multiple VLAN trunks per Cisco PIX Security Appliance • Supports up to 8 VLANs on Cisco PIX 515E Security Appliances
Open Shortest Path First (OSPF) dynamic routing	• Provides comprehensive OSPF dynamic routing services using technology based on world-renowned Cisco IOS Software • Offers improved network reliability through fast route convergence and secure, efficient route distribution • Delivers a secure routing solution in environments using NAT through tight integration with Cisco PIX Security Appliance NAT services • Supports MD5-based OSPF authentication, in addition to plaintext OSPF authentication, to prevent route spoofing and various routing-based DoS attacks • Provides route redistribution between OSPF processes, including OSPF, static, and connected routes • Supports load balancing across equal-cost multipath routes
DHCP server	• Provides DHCP Server services one or more interfaces for devices to obtain IP addresses dynamically • Includes extensions for support of Cisco IP Phones and Cisco SoftPhone IP telephony solutions
DHCP relay	• Forwards DHCP requests from internal devices to an administrator-specified DHCP server, enabling centralized distribution, tracking, and maintenance of IP addresses
NAT/PAT support	• Provides rich dynamic/static NAT and PAT capabilities

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Key Features	Benefit
Rich Management Capabilities	
CiscoWorks VPN/ Security Management Solution (CiscoWorks VMS)	• Comprehensive management suite for large scale deployments • Integrates policy management, software maintenance, and security monitoring
PIX Device Manager (PDM)	• Intuitive, Web-based GUI enables simple, secure remote management of Cisco PIX Security Appliances • Provides wide range of informative, real-time, and historical reports which give critical insight into usage trends, performance baselines, and security events
Auto Update	• Provides "touchless" secure remote management of Cisco PIX Security Appliance configuration and software images via a unique push/pull management model • Next-generation secure XML/HTTPS management interface can be leveraged by Cisco and third-party management applications for remote Cisco PIX Security Appliance configuration management, inventory, software image management/deployment and monitoring • Integrates seamlessly with Management Center for Firewalls and Auto Update Server for robust, scalable remote management of up to 1000 Cisco PIX Security Appliances (per management server)
Cisco PIX CLI	• Allows customers to use existing PIX CLI knowledge for easy installation and management without additional training • Accessible through variety of methods including console port, Telnet and SSH
Command-level authorization	• Enables businesses to create up to 16 customizable administrative roles/profiles for accessing Cisco PIX Security Appliances (for example, monitoring only, read-only access to configuration, VPN administrator, firewall/NAT administrator, and so on) • Leverages either the internal administrator database or outside sources via TACACS+, such as Cisco Secure Access Control Server (ACS)
SNMP and syslog support	• Provide remote monitoring and logging capabilities, with integration into Cisco and third-party management applications
Flexible Expansion Capabilities	
Fast Ethernet expansion options	• Supports easy installation of additional network interfaces via 2 PCI expansion slots • Supports expansion cards including single-port Fast Ethernet card and 4-port Fast Ethernet card
Hardware VPN acceleration options	• Delivers high performance VPN services via support of VPN Accelerator Card (VAC) and VPN Accelerator Card+ (VAC+)

License Options

The Cisco PIX 515E Security Appliance is available in three primary models that provide different levels of interface density, failover capabilities, and VPN throughput.

Restricted Software License

The Cisco PIX 515E "Restricted" (PIX 515E-R) model provides an excellent value for organizations looking for robust Cisco PIX Security Appliance services with minimal interface density and modest VPN throughput requirements. It includes 32 MB of RAM and support for up to three 10/100 Fast Ethernet interfaces.

Unrestricted Software License

The PIX 515E "Unrestricted" (PIX 515E-UR) model extends the capabilities of the family with support for stateful failover, additional LAN interfaces, and increased VPN throughput via integrated hardware-based VPN acceleration. It includes an integrated VAC or VAC+ hardware VPN accelerator, 64 MB of RAM, and support for up to six 10/100 Fast Ethernet interfaces. The Cisco PIX 515E-UR also adds the ability to share state information with a hot-standby Cisco PIX Security Appliance for resilient network protection.

Failover Software License

The Cisco PIX 515E "Failover" (PIX 515E-FO) model is designed for use in conjunction with a PIX 515E-UR, providing a cost-effective, high-availability solution. It operates in hot-standby mode acting as a complete redundant system that maintains current session state information. With the same hardware configuration as the Cisco PIX 515E-UR, it delivers the ultimate in high availability for a fraction of the price.

Performance Summary

Cleartext throughput: 188 Mbps

Concurrent connections: 130,000

168-bit 3DES IPsec VPN throughput: Up to 140 Mbps with VAC+ or 63 Mbps with VAC

128-bit AES IPsec VPN throughput: Up to 135 Mbps with VAC+

256-bit AES IPsec VPN throughput: Up to 140 Mbps with VAC+

Simultaneous VPN tunnels: 2000

Technical Specifications

Processor: 433-MHz Intel Celeron Processor

Random access memory: 32 MB or 64 MB of SDRAM

Flash memory: 16 MB

Cache: 128 KB level 2 at 433 MHz

System bus: Single 32-bit, 33-MHz PCI

Environmental Operating Ranges

Operating

Temperature: –25º to 131ºF (–5º to 55ºC)

Relative Humidity: 5% to 95% noncondensing

Altitude: 0 to 9843 ft (3000 m)

Shock: 1.14 m/sec (45 in./sec) 1/2 sine input

Vibration: 0.41 Grms2 (3–500 Hz) random input

Acoustic Noise 45 dBa maximum

Nonoperating

Temperature: –13 to 158ºF (–25 to 70ºC)

Relative Humidity: 5% to 95% noncondensing

Altitude: 0 to 15,000 ft (4570 m)

Shock: 30 G

Vibration: 0.41 Grms2 (3–500 Hz) random input

Power

Input (per power supply)

Range Line Voltage: 100V to 240V AC or 48V DC

Nominal Line Voltage: 100V to 240V AC or 48V DC

Current: 1.5 Amps

Frequency: 50 to 60 Hz, single phase

Output

Steady State: 50W

Maximum Peak: 65W

Maximum Heat Dissipation: 410 BTU/hr, full power usage (65W)

Physical Specifications

Dimensions and Weight Specifications

Form factor: 1 RU, standard 19-in. rack mountable

Dimensions (H x W x D): 1.72 x 16.82 x 11.8 in. (4.37 x 42.72 x 29.97 cm)

Weight (one power supply): 11 lb (4.11 kg)

Expansion

Two 32-bit/33-MHz PCI slots

Two 168-pin DIMM RAM slots, supporting up to 64 MB memory maximum

Interfaces

Console Port: RS-232 (RJ-45) 9600 baud

Failover Port: RS-232 (DB-15) 115 Kbps (Cisco specified cable required)

Two integrated 10/100 Fast Ethernet ports, auto-negotiate (half/full duplex), RJ-45

Regulatory and Standards Compliance

Safety

UL 1950, CSA C22.2 No. 950, EN 60950, IEC 60950, AS/NZS3260, TS001, IEC60825, EN 60825, 21CFR1040

Electro Magnetic Compatibility (EMC)

FCC Part 15 (CFR 47) Class A, ICES-003 Class A with UTP, EN55022 Class A with UTP, CISPR 22 Class A with UTP, AS/NZ 3548 Class A with UTP, VCCI Class A with UTP, EN55024, EN50082-1 (1997), CE marking, EN55022 Class B with FTP, Cispr 22 Class B with FTP, AS/NZ 3548 Class B with FTP, VCCI Class B with FTP

Product Ordering Information

PIX-515E	PIX 515E chassis only
PIX-515E-DC	PIX 515E DC chassis only
PIX-515E-R-BUN	PIX 515E restricted bundle (chassis, restricted software, 2 10/100 ports, 32 MB RAM)
PIX-515E-R-DMZ-BUN	PIX 515E DMZ bundle (chassis, restricted software, 3 10/100 ports, 32 MB RAM)
PIX-515E-UR-BUN	PIX 515E unrestricted bundle (chassis, unrestricted software, 2 10/100 Ports, 64 MB RAM, VAC or VAC+)
PIX-515E-UR-FE-BUN	PIX 515E unrestricted 6-port FE bundle (chassis, unrestricted software, 6 10/100 Ports, 64 MB RAM, VAC or VAC+)
PIX-515E-FO-BUN	PIX 515E failover bundle (chassis, failover software, 2 10/100 ports, 64 MB RAM, VAC or VAC+)
PIX-515E-FO-FE-BUN	PIX 515E failover 6-port FE bundle (chassis, failover software, 6 10/100 ports, VAC or VAC+)
PIX-515E-DC-R-BUN	PIX 515E DC restricted bundle (chassis, restricted software, 2 10/100 ports, 32 MB RAM)
PIX-515E-DC-UR-BUN	PIX 515E DC unrestricted bundle (chassis, unrestricted software, 2 10/100 ports, 64 MB RAM, VAC or VAC+)
PIX-515E-DC-FO-BUN	PIX 515E DC failover bundle (chassis, failover software, 2 10/100 ports, 64 MB RAM, VAC or VAC+)
PIX-515E-HW=	PIX 515E rack mount kit, console cable, failover serial cable
PIX-FO=	PIX failover serial cable

PIX-4FE	Four-port 10/100 Fast Ethernet PCI expansion card
PIX-1FE	Single-port 10/100 Fast Ethernet PCI expansion card
PIX-VPN-ACCEL	3DES IPsec hardware VPN Accelerator Card (VAC)
PIX-VAC-PLUS	3DES/AES IPsec hardware VPN Accelerator Card+ (VAC+)
PIX-515-VPN-3DES	168-bit 3DES and up to 256-bit AES encryption software license
PIX-515-VPN-3DES=	168-bit 3DES and up to 256-bit AES encryption software license
PIX-VPN-DES	56-bit DES encryption software license
PIX-VPN-DES=	56-bit DES encryption software license

Support Services

Support services are available from Cisco and Cisco partners. Cisco SMARTnet service augments customer support resources, and provides anywhere, anytime access to technical resources (both online and by telephone), the ability to download updated system software, and hardware advance replacement.

Support Ordering Information

CON-SNT-PIX515E	SMARTnet 8x5xNBD service for PIX 515E chassis only
CON-SNT-PIX515ER	SMARTnet 8x5xNBD service for PIX 515E-R bundle
CON-SNT-PIX515EUR	SMARTnet 8x5xNBD service for PIX 515E-UR bundle
CON-SNT-PIX515EFO	SMARTnet 8x5xNBD service for PIX 515E-FO bundle
CON-SNTE-PIX515E	SMARTnet 8x5x4 service for PIX 515E chassis only
CON-SNTE-PIX515ER	SMARTnet 8x5x4 service for PIX 515E-R bundle
CON-SNTE-PIX515EUR	SMARTnet 8x5x4 service for PIX 515E-UR bundle
CON-SNTE-PIX515EFO	SMARTnet 8x5x4 service for PIX 515E-FO bundle
CON-SNTP-PIX515E	SMARTnet 24x7x4 service for PIX 515E chassis only
CON-SNTP-PIX515ER	SMARTnet 24x7x4 service for PIX 515E-R bundle
CON-SNTP-PIX515EUR	SMARTnet 24x7x4 service for PIX 515E-UR bundle
CON-SNTP-PIX515EFO	SMARTnet 24x7x4 service for PIX 515E-FO bundle
CON-OS-PIX515E	SMARTnet On-Site 8x5xNBD service for PIX 515E chassis only
CON-OS-PIX515ER	SMARTnet On-Site 8x5xNBD service for PIX 515E-R bundle
CON-OS-PIX515EUR	SMARTnet On-Site 8x5xNBD service for PIX 515E-UR bundle
CON-OS-PIX515EFO	SMARTnet On-Site 8x5xNBD service for PIX 515E-FO bundle
CON-OSE-PIX515E	SMARTnet On-Site 8x5x4 service for PIX 515E chassis only
CON-OSE-PIX515ER	SMARTnet On-Site 8x5x4 service for PIX 515E-R bundle

CON-OSE-PIX515EUR	SMARTnet On-Site 8x5x4 service for PIX 515E-UR bundle
CON-OSE-PIX515EFO	SMARTnet On-Site 8x5x4 service for PIX 515E-FO bundle
CON-OSP-PIX515E	SMARTnet On-Site 24x7x4 service for PIX 515E chassis only
CON-OSP-PIX515ER	SMARTnet On-Site 24x7x4 service for PIX 515E-R bundle
CON-OSP-PIX515EUR	SMARTnet On-Site 24x7x4 service for PIX 515E-UR bundle
CON-OSP-PIX515EFO	SMARTnet On-Site 24x7x4 service for PIX 515E-FO bundle

Additional Information

For more information, please visit the following links:

Cisco PIX Security Appliance Series:

http://www.cisco.com/go/pix

Cisco PIX Device Manager:

http://www.cisco.com/warp/public/cc/pd/fw/sqfw500/prodlit/pixd3_ds.pdf

Cisco Secure ACS:

http://www.cisco.com/go/acs

CiscoWorks VVMS, Management Center for Firewalls, Auto Update Server Software, and Security Monitor:

http://www.cisco.com/go/vms

SAFE Blueprint from Cisco:

http://www.cisco.com/go/safe

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